

REMARKS

The Examiner's Office Action of April 7, 2005 has been received and its contents reviewed. Applicant would like to thank the Examiner for reviewing and considering this application.

By the above actions, claims 3-4, 14-15, and 21-22 have been amended, and new claims 28-38 have been added. Claims 1-2 and 5-8 have been previously cancelled. Accordingly, claims 3-4 and 9-38 are pending for consideration, of which claims 3-4, 14-15, 21-22 and 28-29 are independent. In view of these actions and the following remarks, reconsideration of this application is now requested.

Referring now to the detailed Office Action, claims 15, 19-20, 22 and 26-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al. (U.S. Patent No. 6,528,854 – hereafter Yoshida), in view of Yamazaki et al. (U.S. Patent No. 5,459,090 – hereafter Yamazaki). Further, claims 3, 4, 10 and 12 stand rejected under 35 U.S.C. §102(e) as being anticipated by Yoshida. Still further, claims 9, 11 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshida. Finally, claims 14, 16-18, 21 and 23-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshida in view of Fujimoto et al. (U.S. Publication No. 2002/0102783 – hereafter Fujimoto).

In regard to the §103(a) rejection of independent claims 15 and 22, the Examiner asserted that all the features of claims 15 and 22 are disclosed in any one of Yoshida and Yamazaki. Applicant has amended claims 15 and 22 as shown above to further distinguish over Yoshida and/or Yamazaki by further reciting "*a substrate having an insulating surface, and a semiconductor film over the substrate*". Support for these features can be found at least on, e.g., page 5, lines 2-5 of the specification and Fig. 2D.

The Examiner may assert that it would be obvious for one having ordinary skill in the art to replace the single crystal silicon substrate of Yoshida with the substrate having an insulating surface of Applicant's claimed invention. However, the presently claimed invention having the substrate with the insulating surface is prone to damage from plasma which is effected as the surface area of gate electrodes become smaller, as shown on page 33, lines 7-10 of the specification. In other words, because the TFTs (i.e., semiconductor device) of the presently claimed invention have a substrate having the insulating surface, the TFTs are easily charged and easily suffered damage from plasma, as discussed on page 3, lines 4-9

of the specification. Hence, Applicant's invention as recited in claims 15 and 22 offers the surprising effect of greatly reducing damage brought by plasma. Yoshida is silent on the above-discussed problem and solution and, therefore, it should not be obvious to replace the single crystal silicon substrate of Yoshida with the substrate having an insulating surface.

Further, the Examiner asserted that it would have been obvious for one having ordinary skill in the art "to have a hard mask shaped as an arc-liked to prevent damage from plasma due to increasing the charge density from decreasing the size/thickness of electrode". However, Applicant respectfully asserts that there is no disclosure, teaching or suggestion in either Yoshida or Yamazaki of preventing damages by plasma. Therefore, the combination of the cited references without proper suggestion for having a hard mask shaped as claimed in claim 15 is improper. If the Examiner would like to give an Official Notice to maintain the assertion that a hard mask shaped as an arc-like prevents damages from plasma, then the Examiner is respectfully requested to provide support for this assertion in accordance with MPEP 2144.03 (pp. 2100-129 and 2100-130, Aug. 2001) and with the Memorandum from the Deputy Commissioner for Patent Examination Policy, Steve Kunin, which is titled *Procedures for Relying on Facts Which are Not of Record as Common Knowledge or for Taking Official Notice*.

It is well settled that when combining the references in order to support a *prima facie* case of obviousness, the references must be considered in their entirety. It is further settled that the mere fact that the prior art may be modified to reflect features of the claimed invention does not make the modification and hence the claimed invention obvious unless the desirability of such modification is suggested by the prior art itself (MPEP §2141). Moreover, the claimed invention cannot be used as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious, *In Re Fritsch*, 23 USPQ2d 1780 (Fed. Cir. 1992). Hence, without proper motivation in the cited prior art references, and as the cited references are deficient in the claimed substrate having an insulating surface, a semiconductor film over the substrate and a gate insulating film formed over the semiconductor in combination with other recited features, the combination of Yoshida and Yamazaki in the rejection of independent claims 15 and 22 is further improper.

With respect to the §102(e) rejection of claims 3, 4, 10 and 12 over Yoshida, the Examiner asserted that all the features of independent claims 3 and 4 are disclosed in Yoshida. Particularly, the Examiner asserted that Yoshida discloses a gate electrode 116 formed over gate insulating film 124 and a "hard mask" (i.e., cap layer 120) formed over the gate electrode. The Examiner further asserted that the diffusion deterrent layer 126 of Yoshida is equivalent to Applicant's interlayer insulating film. However, Applicant respectfully submits that the diffusion deterrent layer 126 of Yoshida is formed on the gate oxide layer 124 and that the diffusion deterrent layer 126 prevents hydrogen and nitrogen in the sidewalls 122 from diffusing into silicon substrate 102, as disclosed in, e.g., col. 3, lines 50-52 of Yoshida. Hence, the diffusion deterrent layer 126 of Yoshida does not appear to be structurally or functionally equivalent to Applicant's claimed interlayer insulating film of amended claims 3 and 4. Accordingly, should the Examiner still maintain that the diffusion deterrent layer 126 of Yoshida is equivalent to Applicant's claimed interlayer insulating layer film, Applicant requests the Examiner to provide proper support.

Notwithstanding the arguments set forth above, to further distinguish the presently claimed invention over Yoshida, Applicant has amended independent claims 3 and 4, as shown above, to further recite "*a substrate having an insulating surface, and a semiconductor film over the substrate*" in similar manner as claims 15 and 22 discussed above. Therefore, Applicant's arguments set forth above with respect to claims 15 and 22 are also applicable to amended claims 3 and 4.

Consequently, since each and every feature of the present claims is not taught (and is not inherent) in the teachings of Yoshida, as is required by MPEP Chapter 2131 in order to establish anticipation, the rejection of claims 3, 4, 10 and 12, under 35 U.S.C. §102(e), as anticipated by Yoshida is improper.

With respect to the §103(a) rejection of claims 14, 16-18, 21 and 23-25 over Yoshida in view of Fujimoto, the Examiner asserted that all the features of the independent Claims 14 and 21 are disclosed in Yoshida and Fujimoto. In response, to further distinguish the claimed invention over Yoshida and Fujimoto, Applicant has amended claims 14 and 21, as shown above, to further recite "*a substrate having an insulating surface, and a semiconductor film over the substrate*" in similar manner as amended claims 15 and 22 discussed above.

Hence, Applicant's arguments set forth above with respect to claims 15 and 22 are also applicable to amended independent claims 14 and 21.

In the interest of keeping prosecution history compact, and as the above-presented amendments and arguments with respect to the rejections of independent claims are deemed sufficient to overcome the pending rejections, Applicant will not traverse each and every rejection of the dependent claims. Applicant reserves the right to do so in the future, as necessary.

New claims 28-38 have been added to further complete the scope to which Applicant is entitled. Claims 28 and 29 are based on amended claims 3 and 4, and the added features are supported by Fig. 2D and Figs. 8A, 8B and 8C, for example.

In view of the amendments and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of all the pending rejections.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicant's representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,



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